

3—A Fossil Crab from the Lakes Entrance Oil Shaft, Gippsland, Victoria

By IRENE CRESPIN, B.A.

[Read 6th June, 1946]

Introduction

During the sinking of the Lakes Entrance Oil Shaft, situated in the Parish of Colquhoun, about 2 miles north-east of Lakes Entrance township, 198 miles east of Melbourne, a very large quantity of sedimentary material was excavated and many well-preserved fossils were discovered.

The shaft was sunk to the depth of 1,212 feet, and during operations a unique opportunity was afforded the palaeontologist to collect suites of fossils from the various stratigraphic horizons through which the shaft passed. The writer paid frequent visits to the site to make observations on the stratigraphic sequence and to collect fossiliferous material. At the same time members of the staff at the shaft were constantly on the watch for specimens of large fossils, and it was due to the keenness of certain of these men that the remains of a fossil crab were discovered.

Two carapaces and a chela were found at a depth of 1,000 feet in brown, fine-grained, sandy and micaceous marls, characteristic of the Janjukian Stage of the Middle Miocene in the Lakes Entrance Area. (Crespin, 1943.) They were associated with an assemblage of micro-fossils which are typical of Janjukian deposits elsewhere in Victoria.

The discovery of remains of a decapod crustacean referable to the genus *Harpactocarcinus* in rocks of Middle Miocene age in Victoria, is of some importance. The only other crab previously recorded from the Victorian Tertiaries is *Ommatocarcinus corioensis* (Cresswell), which was found in the Miocene deposits at Corio Bay near Geelong. (Cresswell, 1886.) It was considered that the genus *Harpactocarcinus* had a restricted range from Eocene to Oligocene. Two species, *H. americanus* and *H. rathbunae*, have been recorded from the Eocene of Texas (Stenzel, 1934), and one species, *H. tumidus*, was described from the Upper Oligocene beds at Woodpecker Bay, Brighton, South Island, New Zealand. (Woodward, 1876.) However, in a personal communication from Dr. Marwick of the Geological Survey of New Zealand, he stated that specimens of a crab, probably referable to *Harpactocarcinus*, had been discovered in beds of Middle to Upper Miocene age in New Zealand.

The type specimens of *Harpactocarcinus victoriensis* are housed in the Commonwealth Palaeontological Collection, Mineral Resources Survey, Canberra.

The plate which accompanies this paper has been prepared by Mr. E. Crisp, of the Department of the Interior, Canberra, to whom I express my thanks.

Description of Species

Order: DECAPODA

Family: XANTHIDAE

Genus *Harpactocarcinus* Milne-Edwards 1862

HARPACTOCARCINUS VICTORIENSIS sp. nov.

(Plate IV, figs. 1-7)

HOLOTYPE. Carapace preserved partly with armour in place and partly as internal mould. Carapace very tumid from front to back, especially in branchial and gastric regions. Whole of surface finely granulated. Frontal portion broken and partly obscured by matrix. Frontal margin is narrow, span between orbits measuring 15 mm. Orbits are shallow and rounded. Lateral angles of epibranchial border marked by blunt and rounded denticles. The under side of carapace shows broad abdomen, suggesting a female form. The last segment of the abdomen is broadly triangular in shape. Other segments are indistinct.

Width of carapace, 85 mm.; length from rostrum to posterior border, 78 mm.; length along curve of carapace, 90 mm.; greatest thickness, 35 mm.

PARATYPES. *A.* Carapace, preserved chiefly as internal mould. Carapace flatter than in holotype, covered with fine granulations. Posterior border broken. Frontal portion also broken, but indications are that rostrum short. The divisions between the branchial, cardiac and gastric regions are very slightly indicated by undulations of the surface of the carapace, and by a slightly roughened and incised line, petalloid in shape, of short oblique markings on the side of the gastric region.

On the under side, the sternum is fairly well preserved. The longitudinal median groove of the sternum, shallow. The first segment of the sternum is broadly V-shaped from in front of the abdominal tip to the anterior margin of sternum. The abdomen is not preserved. The four pairs of simple monodactylous feet are present, but have been broken.

Width of carapace, 89 mm.; length from rostrum to broken posterior border, 75 mm.; length along curve of carapace, 80 mm.; thickness of carapace, 25 mm.

B. Right Chela. Chela preserved as internal mould with a few fragments of armour in place; incomplete, robust and covered entirely with fine granulations. Roughly triangular in shape. Proximal end contracted, distal end broad. Outside surface strongly convex; inside slightly convex in central portion with a depression towards proximal end, near outer margin. Outer margin strongly curved towards narrow proximal end. Inside margin nearly straight, but tapering towards proximal end. Both fixed finger and dactylus broken.

Length of palm, 50 mm.; width at proximal end, circ. 12 mm.; width at distal end, 37 mm.; thickness of palm near distal end 27 mm.

OBSERVATIONS. This new species of crab from the Middle Miocene of Victoria closely resembles *Harpactocarcinus tumidus* described by Woodward from the Upper Oligocene of New Zealand (Woodward, 1876). In *H. victoriensis* the carapace is covered entirely with fine

granulations, whereas in *H. tumidus*, only the posterior part of the carapace is completely granulated, the anterior portion being smooth. There is also a difference in shape of the petalloid markings on the carapace of *H. victoriensis* (only visible on paratype) and *H. tumidus*. The area between the tips of the two petals are broadly V-shaped in the former and broadly U-shaped in the latter. The holotype of the Victorian species is slightly larger than the New Zealand form, and shows a greater depth when measured along the curve of the carapace. The paratype exhibits less tumidity than either the holotype or the New Zealand species.

OCURRENCE. In brown, fine-grained, sandy and micaceous marls, Lakes Entrance Oil Shaft, Gippsland, Victoria, at the depth of 1,000 feet.

Holotype. Comm. Pal. Coll. No. F. 15,644, Type No. 318.

Paratypes. Carapace, Comm. Pal. Coll. No. F. 13,692, Type No. 319; Chela, Comm. Pal. Coll. No. F. 15,645, Type No. 320.

AGE. Janjukian Stage of the Middle Miocene.

References

- CRESPIN, I., 1943. The Stratigraphy of the Tertiary Marine Rocks in Gippsland, Victoria. *Min. Res. Surv. Bull.* No. 9 (Pal. Ser. No. 4).
 CRESSWELL, A. W., 1886. Notes on some Fossil Crabs from the Miocene Rocks of Corio Bay. *Vict. Nat.*, 3 (7), pp. 86-91.
 HALL, T. S., 1905. A Description of *Ommatocarcinus corioensis*, Creswell sp., from the Lower Tertiary of Victoria. *Proc. Roy. Soc. Vict.*, n.s. 17, (2), pp. 356-360.
 STENZEL, H. B., 1934. Decapod Crustaceans from the Middle Eocene of Texas. *Journ. Pal.* 8, (1), pp. 38-56.
 WOODWARD, H., 1876. On a new Fossil Crab from the Tertiary of New Zealand, collected by Dr. Hector, F.R.S., F.G.S., Director of the Geological Survey of New Zealand. *Quart. Journ. Geol. Soc.* 32, pp. 51-56.

Explanation of Plate

PLATE IV

- Fig. 1—*Harpactocarcinus victoriensis*, sp. nov. Dorsal view of holotype.
 Fig. 2—Side view of same to show tumidity
 Fig. 3—Ventral view of same.
 Fig. 4—*H. victoriensis*, sp. nov. Dorsal view of paratype.
 Fig. 5—Ventral view of same.
 Fig. 6—Inner view of right chela.
 Fig. 7—Outer view of right chela.

All figures are 2/3rd natural size.